Patient Handling in a Military Treatment Facility

Ergonomics Program

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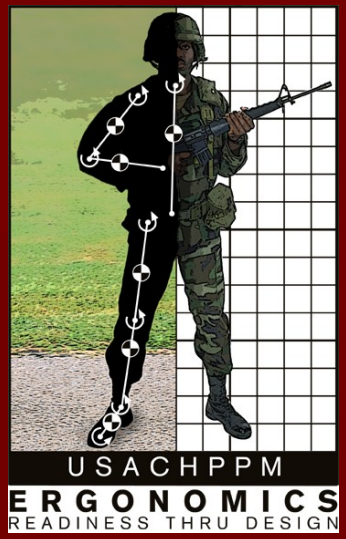


What you will get from this presentation

- Magnitude of the Problem
- VHA Program
- WRAMC Project
- Challenges
- Strategies
- Future Research Needs

USACHPPM

Patient Handling

Problem

- WMSDs affect 1.7 million workers every year and account for 1/3 of all reportable injuries (Frymoyer, 1997)
  - 60,000 will result in permanent disability
  - Back pain – most common musculoskeletal problem
  - 60 to 80% of the workforce will experience some type of LBP

Low Back Disorders

- Account for 27% of all nonfatal occupational injuries involving days away from work in the US (NORA, 2002)
- Economic costs
  - Average compensation claim: $8,300 (twice the average cost of $4,075 for all other compensable claims combined)
  - 1995: Total expenditures for WC claims for LBP – estimated at $8.8 billion (Shaw, 2001)

Lost days away from work

Type of injury	# of cases	% resulting in back injury
Repetitive Motion	705,800	32%
Lifting	367,424	65%
Pushing/Pulling Objects	93,325	52%
Holding/Carrying or Turning Objects	68,992	58%

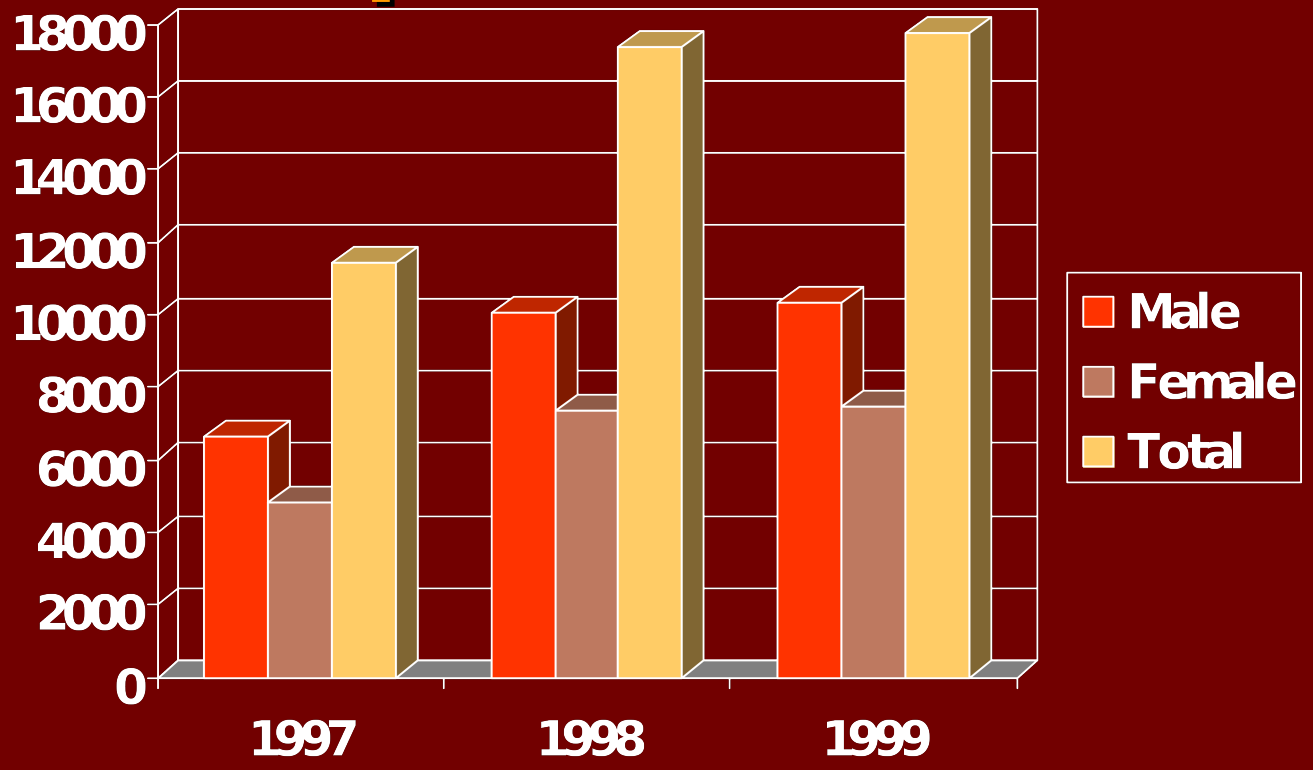
BLS, 1994

Industries with Highest Incidence Rates of Injuries/Illnesses from Overexertion Resulting in Days Away from Work

Industry	Annual average employment (in thousands)	Incidence Rate (per 10,000 workers)	# of cases
Nursing and personal care facilities	1,648	318.0	41,884
Air transportation, scheduled	607	306.7	16,309
Travel trailers and campers (manufacturing)	22	303.7	635
Bottled/canned soft drinks (manufacturing)	95	255.6	2,512
Coal mining	112	235.6	2,609

BLS, 1994

Magnitude of the Problem
Number of Clinic Visits
Back Injuries
Enlisted Health Care Specialists



Source: DMSS

Nursing is a High Risk Occupation

- Second only to heavy industry, such as coal mining (Abenhaim, et.al. 1988)
- 12% nurses leave the profession each year due to chronic/acute back injuries and pain (Charney, et.al, 1991)
- Over 52% nurses complain of chronic back pain lasting more than 14 days within the past 6 months (TerMat, 1993)

Nursing is a High Risk Occupation

- Based on workers' compensation claims for back injuries, nursing aides and practical nurses were ranked fifth and ninth, respectively among all occupations (BLS, 1994)
- It is estimated that up to 20% of nursing transfers to different jobs are associated with back injury risk (Owen, 1989)
- Moving patients in bed and transferring patients out of bed were responsible for 29% and 24% of low back injuries, respectively (Vasiliadou, et.al. 1995)

What We Know So Far

- Most injuries are cumulative in nature.
- Patient care space deficits increase risk by forcing the nurse into awkward positions.
- Many nursing tasks far exceed the threshold guidelines (such as NIOSH lift equation)

Nursing Issues

- Current workforce shortage
- Increasing options
- Decreasing enrollment
- Aging workforce
- Injuries

Interventions

- Approaches
  - Body mechanics, education and training in lifting techniques, or
  - Solely purchasing patient lift devices.

- Over the past 20 years, efforts to reduce work-related injuries in nursing have been largely unsuccessful.

VHA PROGRAM

Key Program Elements

- Ergonomic Systems Approach
- Safe Patient Handling & Movement Policy
- Back Injury Resource Nurses (BIRN's)
- After Action Review Process
- Safe Patient Handling & Movement Source Book
- Lifting Equipment Resource Guide

Patient Care Equipment

- Full Body Sling Lifts (Powered/Non Powered)
- Lateral Transfer Aids
- Powered Stand Assist & Repositioning Lifts
- Stand Assist & Repositioning Aids
- Transfer Chairs
- Dependency/Geri Chairs
- Gait Belts

24 Hour Patient Handling Study

Walter Reed Army Medical Center

Objectives

- Describe patient handling demands based on patient and nursing staff population and staff physical exertion that occurs on inpatient units during a 24 hour period

- Describe the physiological effect of transfers on discomfort level based on patient dependency level, nursing and patient population demographics, transfer characteristics and type of shift.

Patient Handling Survey

Subject Population: Approximately 300 nursing personnel volunteers from Walter Reed Army Medical Center inpatient units.

Patient Handling Study Process

- Complete demographic survey and baseline body diagram at the start of shift.
- Complete one coupon for each patient transfer performed throughout their shift.
- Research staff were stationed on each ward for the entirety of the study to provide confidentiality and answer any nursing staff questions.

Patient Handling Survey

Demographic Survey

Demographics **ID # 0001**

Status:
O Military
O Civilian
O Contractor

Gender:
O Female O Male

Job Title:
O RN O LPN
O Nurse aid
O Tech

Age at Last Birthday: _____

_____ MOS (military only)

Typical Shift Worked
O Day: 7:00AM to 3:00PM :
O Evening:3:00PM to 11:00PM
O Night:11:00PM to 7:00AM
O Other:_____
(non standard)

Type of Ward: _____

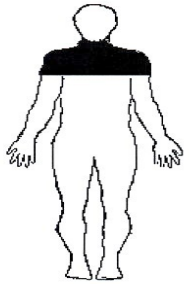
Average # of transfers performed per day: _____

Average time spent per transfer: _____**minutes**

Number of years doing patient handling? _____

Neck/Shoulders

1. Any discomfort in the past 12 months?
O Yes (if Yes, go to question 2)
O No (if No, go to upper/lower back)



2. Please check the words that best describe your problem?
O Aching O Numbness
O Tingling O Burning
O Cramping O Stiffness
O Swelling O Pain
O Weakness O Loss of Color
O Other

3.When did you first notice the problem?_____(month)_____(year)

4. How long did the episode last?
O 1 hour O 1 day O 1 week
O 1 month O 6 months

5. How many episodes have you had in the past year?_____

6. Have you had this problem in the past 7 days? O Yes O No

7. How would you rate this problem right now?
1 2 3 4 5 6 7
None Mild Strong Severe

8. How would you rate this problem when it is the WORST?
1 2 3 4 5 6 7
None Mild Strong Severe

9. Have you had medical treatment for this problem?
O Yes O No
If yes, did treatment help? O Yes O No

10. How much time have you lost in the last year because of this problem? (include sick and comp days) _____days

11. For civilians-Was a workers comp claim filed? O Yes O No

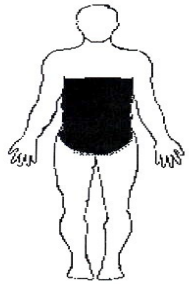
12. How many days in the last year were you on restricted or light duty because of this problem?_____ days

13. What do you think caused the problem?_____

_____

Upper/Lower Back

1. Any discomfort in the past 12 months?
O Yes (if Yes, go to question 2)
O No (if No, go to upper extremity)



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_____

Patient Handling Study Coupon books

1. Time of Day: _____

2. Patient Weight: _____

3. Transfer Type:

A. From:		To:
Chair	O	O Chair
Bed	O	O Bed
W/C	O	O W/C
Guerney	O	O Guerney
Commode	O	O Commode
Shower	O	O Shower
Floor	O	O *(i.e., patient fall)*

B. Repositioning:

O Rolling in bed
O Move to head of bed

4. Patient's Dependency Level

O Independent O Min Assist
O Mod Assist O Max Assist
O Dependent

5. # Staff Performing Transfer:

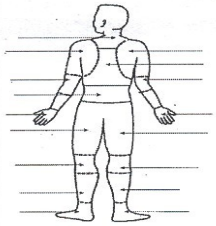
O O O O O O
1 2 3 4 5 6

6. Equipment Used? O Yes O No
If yes, type: (see reverse for choices)
_____

7. How Long Did Transfer Take?
_____minutes

8. How Long Did Transfer Set up Take?_____minutes

Discomfort Rating



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10. Using the diagram to the left, rate any discomfort you feel after the transfer:

1 Very Mild
2 Mild
3
4 Moderate
5
6 Severe
7 Extremely Severe

9. How Much Physical Exertion Did The Transfer Require?

O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
1 None	2 Extremely Light	3	4 Very Light	5	6 Light	7	8 Somewhat Hard	9	10 Hard (Heavy)	11	12 Very Hard	13	14 Extremely Hard	15 Maximal Exertion

Equipment Codes	Dependency Level Rating	Discomfort Rating
A. Full Body Sling Lifts-powered **B. Full Body Sling Lifts-nonpowered** **C. Lateral transfer aids** **D. Powered stand assist and repositioning lifts** **E. Stand Assist and Repositioning aids** **F. Transfer Chairs** **G. Gait Belts**	**Independent**- able to perform without assistance **Minimum Assistance**-Oversight or cueing provided three or more times during last seven days or physical assistance provided only one or two times in last seven days. **Moderate Assistance**-Highly involved in activity, able to pivot transfer and has considerable upper body strength and bears some weight on legs. May need some assistance to sit up. **Maximum Assistance**- Can perform part of an activity, follow simple directions, bear some weight, maybe able to pivot transfer **Dependent**- cannot help at all with transfers	**Mild**- **Slight discomfort** **Moderate**- **Medium discomfort, not excessive or extreme.** **Severe**-**Causing great discomfort, damage or distress. Extremely difficult to endure.**

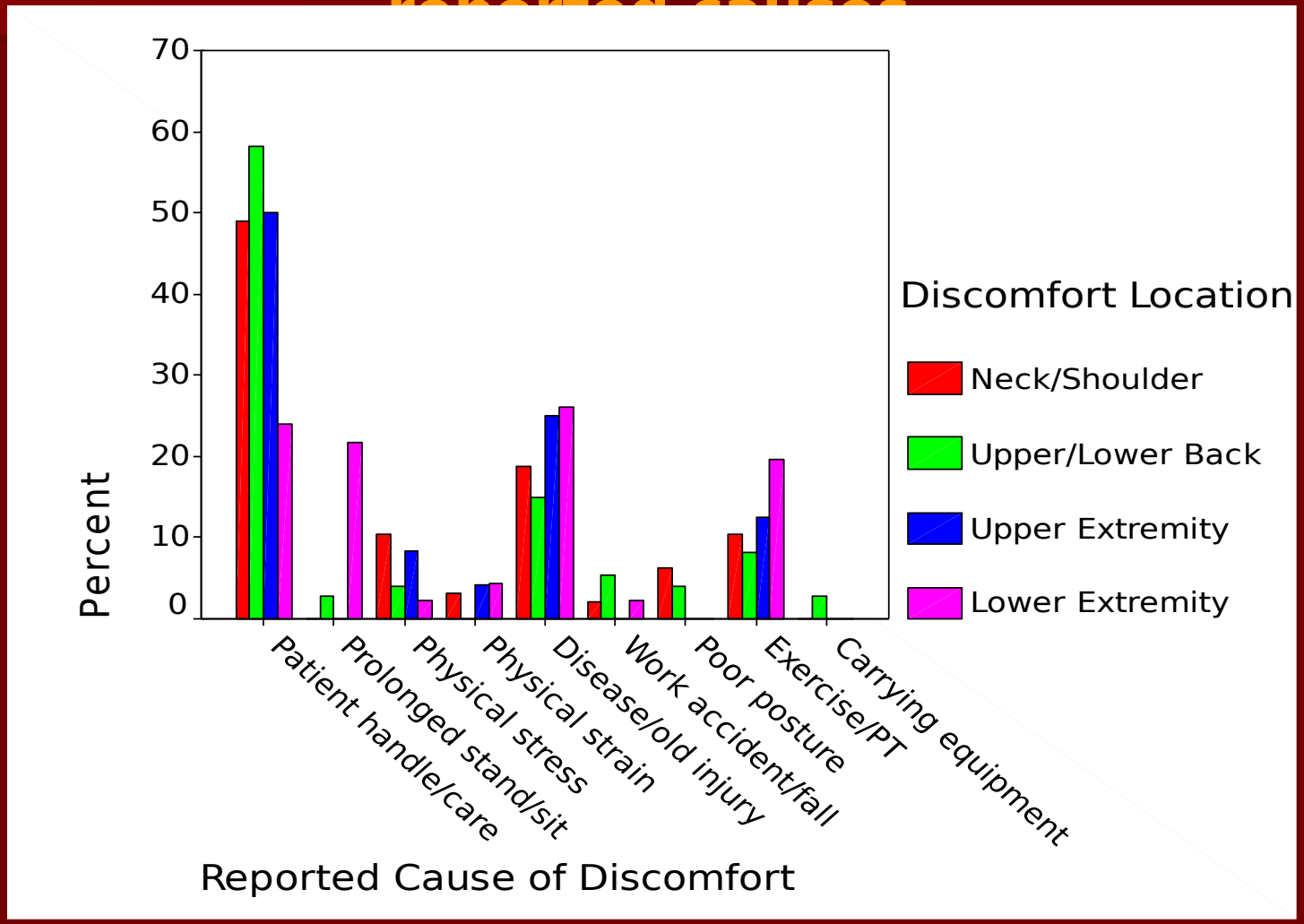
Results

Staff Demographics

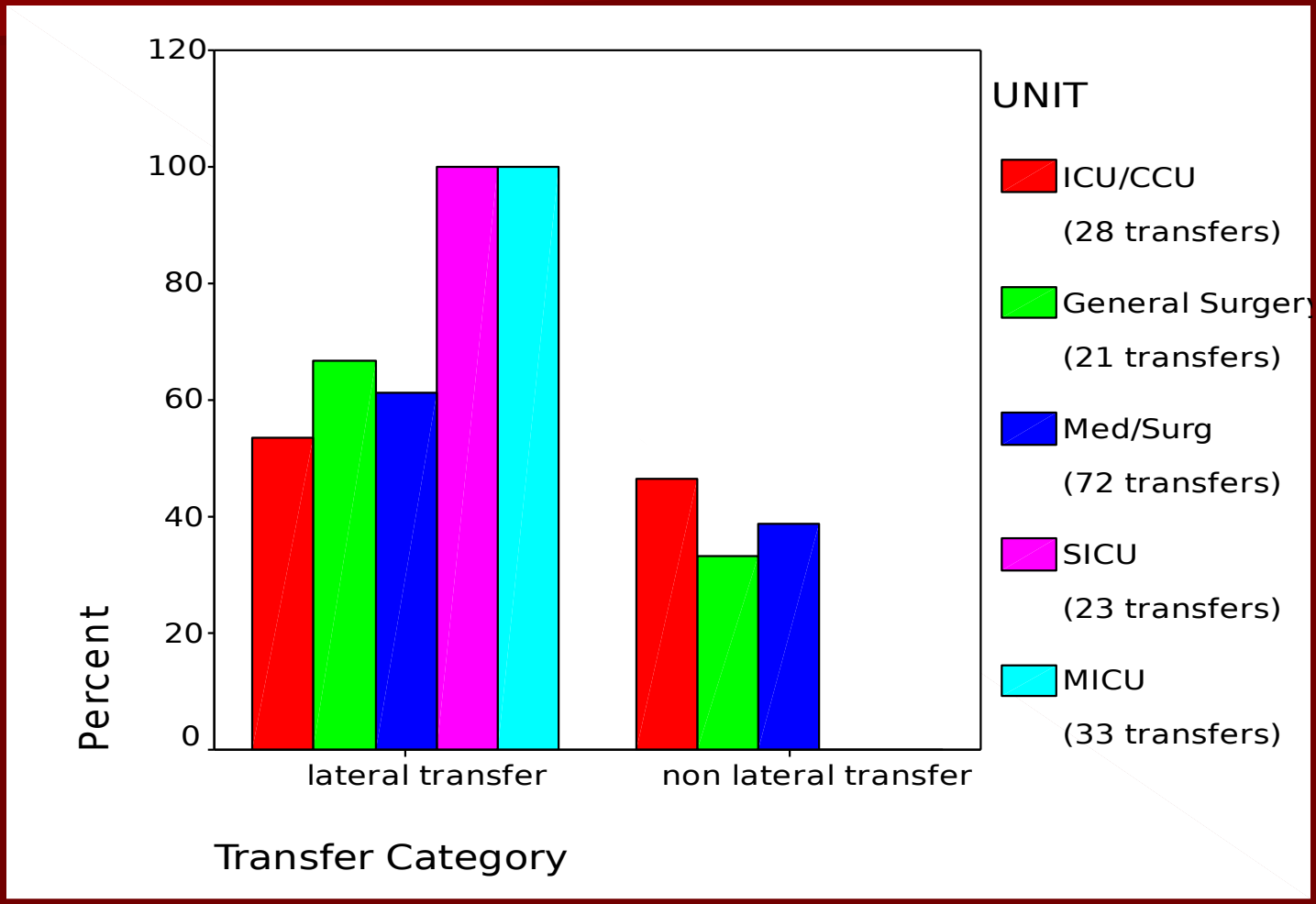
	Military	Civilian including Contractor	Percentage/Mean of Total Reporting Population
% Of total staff	46 %	54%	
% Female	42%	85%	64%
% Male	58%	15%	36%
% Reporting Discomfort	40%	60%	55%
Mean Age	29 years	40 years	35 years

Demographics include 175 staff members that completed the demographic survey. Approximately 283 nursing personnel were on duty giving a 62% response rate.

Percent of discomfort in neck/shoulder, upper/lower back, upper extremity and lower extremity as result of reported causes



Percent of total transfers on 5 units with most responses that are lateral and non-lateral transfers



Conclusions

- Military personnel were younger than their civilian co-workers.
- More than 50% of transfers required greater than moderate exertion.
- Repositioning in bed transfers were more than twice as frequent as the 2nd most often performed transfer.

Conclusions

- More than 50% of all lateral transfers, including repositioning and bed to bed, required moderate or greater physical exertion while less than 20% of all other transfer types combined required moderate or greater physical exertion.

- 64% of lateral transfers required greater than 13 minutes to perform. 10.7% of all other transfers required greater than 13 minutes.

Intervention Phase

- Nursing supervisor training
- Back injury resource nurse assignment and training
- Nurse/assistant training
- Equipment solutions
- Command/leadership support
- Follow up surveys

Challenges

- Data Gathering
  - Ability to identify high risk areas within facility
- Underreporting
  - Beliefs
- Buy-in
  - Command/leadership (Field of Dreams)
  - Employees (Culture)
- Funding
- Patient/Family Acceptance
- Patient Management Practices

Strategies

- Command/Leadership Support
- Identify champions within the facility
- Identification
  - Tasks, Units
  - Current practices as compared to best practices
- Risk Assessment
- Equipment Selection
- Involve employees in process
- Education/Training
- Policy

Future Research Needs

- Acute care facility
  - Tasks
  - Units
- Low cost interventions
- Home care needs
- Standardization of assessments and procedures

QUESTIONS?